

LOCTITE

1001 Trout Brook Crossing
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Product Description Sheet

Hysol® Product 9432NA

Industrial Products, August 2001

Description

Loctite® Hysol® 9432NA is an aluminum filled, thixotropic, one component epoxy adhesive. Hysol 9432NA is formulated to provide excellent tensile shear strength over a wide range of temperatures and a high degree of impact resistance. This adhesive can bond oily and other poorly prepared surfaces and can be used to bond a wide variety of substrates. Hysol 9432NA is designed to cure at moderate temperatures but has a long shelf life at room temperature. This adhesive can be easily pumped and dispensed onto parts without sagging due to its high thixotropy.

Features

One Component – No Mixing Required
Thixotropic Non Sag Paste
Excellent High Temperature Performance
Excellent Chemical Resistance
Room Temperature Storage
Tolerant to Poorly Prepared Surfaces

Typical Properties

Color Gray
Viscosity, cP 150,000-300,000
Specific Gravity @ 77°F 1.38
Density lb per Gallon 11.5
Slump @ 300°F (1/4" Diameter bead on vertical) 0.3" Max

Application

Applying: Please read and understand the Material Safety Data Sheet before using this product. Allow material to come to room temperature before use. Bonding surfaces should be clean, dry and properly prepared. Apply adhesive to one or both substrates to be bonded. The parts must be held in contact until the adhesive is cured. It is important to remove uncured adhesive before curing. See "Clean Up" below for removal of uncured adhesive. Once cured, 9432NA is very difficult to remove. Large quantities of uncured adhesive may exotherm during the cure cycle. Avoid quantities larger than 10 grams in mass. Larger quantities in a bondline are safe to cure.

Cure: Hysol 9432NA can be cured for 60 minutes at 250°F. Faster cures can be achieved by using higher temperatures, for example, 30 minutes at 300°F. Cure temperatures above 350°F and below 250°F are not recommended. Cure time on your part will depend upon factors such as part geometry, materials to be bonded, bondline thickness and efficiency of the oven. Cure schedule should be confirmed with actual production parts and equipment. A clamping pressure of 15 psi is recommended to ensure that good contact is maintained during the cure cycle.

Clean Up: Uncured adhesive can be removed from the work area and application equipment by using many common solvents and citrus cleaners. Consult with your supplier's information pertaining to the safe and proper use of solvents.

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

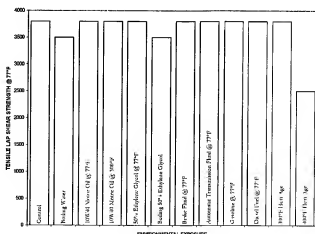
For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

Shear Strength, psi, ASTM D 1002 Etched Aluminum		
Cure Schedule	Test Temp °F	Typical Value
30 mins @ 300°F	-67	3500
	77	3800
	250	3000
	300	2400
	350	400
	400	400

Shear Strength, psi, ASTM D 1002 Cured 30 Mins @ 300°F		
	Test Temp °F	Typical Value
Depressed Aluminum	77	3500
CR Steel Abraded	77	3000
CR Steel Degreased	77	2850
CR Steel Oily	77	2600
Owens Corning Fiberglas SMC	77	400
Budd Company Fiberglas SMC	77	390
Fiberglas Vinyl Ester Laminate	77	1000

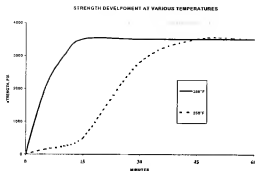
Typical Properties	Typical Value
Tensile Strength, psi, ASTM D 638	7350
Modulus, psi, ASTM D 638	680,000
Elongation, %, ASTM D 638	1.2
Hardness, Shore D	90

Environmental Resistance: Reported as tensile lap shear strength tested at 77°F per ASTM D 1002 after a 30 day soak in the specified fluid. Tensile lap shear on 16 gauge sandblasted cold rolled steel with 5 mil bondline cured for 30 minutes at 300°F.



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Packaging

One Gallon Cans, Five Gallon Pails

Storage

Products shall be ideally stored in a cool, dry location in unopened containers at a temperature between 2° to 8°C (36° to 46°F), unless otherwise labeled. Optimal storage conditions of this product is achieved with refrigeration. Refrigerated packages shall be allowed to return to room temperature prior to use. To prevent contamination of unused product, do not return any material to its original container. For specific shelf-life information, contact your local Technical Service Center.

Note

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Product Description Sheet

Hysol® Product 9433

Industrial Products, August 2001

Description

Loctite® Hysol® 9433 is a fast cure, medium viscosity toughened epoxy resin formulation recommended for industrial adhesive, small potting and laminating applications where excellent structural, mechanical and electrical properties are required. This two part adhesive exhibits good wetting, cures at room temperature and develops strong, low shrinkage bonds to most materials including optical fibers, glass ceramics, most metals and many rigid plastics.

Recommended Substrates: composites, metals, glass, ceramics, thermoset polyester, many plastics and wood products

Features

Quick Set
Easy to Mix
Good Wetting
Room Temperature Cure
High Peel Strength
Self Levelling, Flowable

Typical Uncured Properties	Part A	Part B	Mixed
Pot Life @ 77°F, 20 grams mins			25 to 30
Color	White	Light Yellow	Cream
Viscosity, cP	124,000 to 224,000	65,000 to 165,000	--
Mix Ratio			
By weight	100	43	--
By volume	2	1	--

Typical Properties	Typical Value
Tensile Strength, psi, ASTM D 638	7200
Hardness, Shore D	75

Electrical Properties	Typical Value
Dielectric Strength, ASTM D149, V/mil	405

Shear Strength, psi, ASTM D 1002 Etched Aluminum	
Cure Schedule	Test Temp °F
24 Hours @ 77°F	77
	180
	200

Peel Strength ASTM D 3167	Etched Aluminum, pli
3 Days @ 77°F	45

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

Handling

Mixing: This product requires mixing two components together just prior to application. Complete mixing is necessary. The temperature of the separate components prior to mixing is not critical, but they should be close to room temperature.

Application

Mixing - Bulk: Combine Part A (resin) and Part B (hardener) in the correct ratio and mix thoroughly until the color and consistency are uniform. Mixing the adhesive just prior to use is recommended. Heat buildup during or after mixing is normal. Do not mix quantities greater than one pound as dangerous heat buildup can occur causing uncontrolled decomposition of the mixed adhesive. Mixing smaller quantities will minimize the heat buildup.

Mixing - Cartridges: Place cartridge in proper dispenser. Remove cap from cartridge and predispense until both parts (Part A and Part B) are visible in the nozzle. Attach nozzle and dispense approximately 1-2" before dispensing onto part to be bonded. Partially used cartridges should be stored with the mixing nozzle attached. To reuse, remove and discard the old nozzle, attach new nozzle, and begin dispensing.

Application: Bonding surfaces should be clean and dry. Once the adhesive is applied, the bonded parts should be held in contact until the part has developed handling strength. It is not necessary to clamp the parts unless movement during cure is likely.

Cure: Complete cure is obtained after 24 hours at room temperature (77°F). Hysol 9433 will achieve handling strength after ten minutes at 140°F (NOTE: this can vary with different bond configurations). Hysol 9433 can also be fully cured in 30 minutes at 180°F. Other times and temperatures (250°F is a suggested maximum) can be used depending on the application.

Clean Up: It is important to remove excess adhesive from the work area and application equipment before it hardens. Many common solvents and citrus cleaners are suitable for removing uncured adhesive. Consult with your supplier's information pertaining to the safe and proper use of solvents.

Availability

50 and 200 ml. EPS cartridges
One and Five Gallon Systems

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Storage

Store product in unopened container in a cool dry location. Ideal conditions are within the range 8 to 21 degrees C (46 to 70 degrees F) and are recommended for long term storage. Exposure to higher temperatures (greater than 28 degrees C) for prolonged periods should be avoided as extended exposure to warm conditions can adversely affect product properties. For further specific shelf life information, contact your local Technical Service Center.

Note

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Product Description Sheet

Hysol® Product 9340

Industrial Products, August 2001

Description

Loctite® Hysol® 9340 is a general purpose adhesive with exceptional high temperature performance. This easy to use epoxy is can be used in many demanding applications where resistance to chemicals and heat extremes are required. Hysol 9340 can be used on many different substrates such as wood, metal, ceramics, and most plastics. This exceptional epoxy can be sanded and drilled and painted after curing making it ideal for finish work.

Features

Excellent Heat Resistance
Good Tensile Shear Strength
Resistant to Automotive Fluids
Sandable
Easy to Mix

Typical Uncured Properties	Part A	Part B	Mixed
Pot Life @ 77°F, 100 grams mins	--	--	90
Color	Green	Grey	Grey
Viscosity, cP	Paste	Paste	Paste
Specific Gravity	--	--	--
Mix Ratio			
By weight	1	1	--
By volume	1	1	--

Typical Properties	Typical Value
Hardness, Shore D	>80

Shear Strength, psi, ASTM D 1002 Etched Aluminum		
Cure Schedule	Test Temp °F	Typical Value
3 Days @ 77°F	-40	2100
	77	2300
	180	1850

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

Handling

Mixing: Hysol 9340 requires mixing Part A and Part B together just prior to the application. Complete mixing of the two components is necessary.

Application

Mixing: Combine Part A (resin) and Part B (hardener) in the correct ratio and mix thoroughly. Continue to mix until all green and gray streaks are gone and mix is uniformly gray. This is important! Heat build-up during or after mixing is normal. Do not mix quantities greater than one pound as excessive exotherm or heat build-up will develop. Mixing smaller quantities will minimize the heat build-up.

Application: Bonding surfaces should be clean and dry. The bonded parts should be held in contact until the adhesive is set. It not necessary to maintain fixturing for the entire cure schedule but only until handling strength is achieved.

Cure: Hysol 9340 can be cured by a variety of cure schedules to meet processing requirements. Hysol 9340 will achieve handling strength in 6-8 hours at room temperature (note: this can vary with different bond configurations and ambient temperatures). Full cure time at 77°F is 24 hours. Heat cures can be used to shorten this time. For instance, one hour at 180 °F or 2 hours at 140 °F is sufficient to fully cure the adhesive.

Clean up: It is important to remove excess adhesive from the work area and application equipment before it hardens. Many common solvents and citrus cleaners are suitable for removing uncured adhesive. Consult with your solvent supplier for information pertaining to the safe and proper use of solvents.

Packaging

2.7 oz. Tube Kits
Quart, One Gallon Systems

Storage

Store product in unopened container in a cool dry location. Ideal conditions are within the range 8 to 21 degrees C (46 to 70 degrees F) and are recommended for long term storage. Exposure to higher temperatures (greater than 28 degrees C) for prolonged periods should be avoided as extended exposure to warm conditions can adversely affect product properties. For further specific shelf life information, contact your local Technical Service Center.

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Product Description Sheet

Hysol® Product 9459

Industrial Products, August 2001

Loctite® Hysol® 9459 is a self-leveling, roller-coatable, one-component epoxy adhesive.

Features

One Component – No Mixing Required
Self-Leveling
Excellent High Temperature Performance
Excellent Chemical Resistance

Typical Properties

Color White to Light Gray
Viscosity, cP 36,000 to 42,000
Specific Gravity @ 77°F 1.37

Packaging

One-Gallon Cans, Five-Gallon Systems

Storage

Products shall be ideally stored in a cool, dry location in unopened containers at a temperature between 2° to 8°C (36° to 46°F), unless otherwise labeled. Optimal storage conditions of this product is achieved with refrigeration; Refrigerated packages shall be allowed to return to room temperature prior to use. To prevent contamination of unused product, do not return any material to its original container. For specific shelf-life information, contact your local Technical Service Center.

Shear Strength, psi, ASTM D 1002 Etched Aluminum		
Cure Schedule	Test Temp °F	Typical Value
60 Mins @ 250°F	77	3000
	180	2900
	250	2500
	300	2100

Note

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GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

Application

Applying: Allow material to come to room temperature before use. Bonding surfaces should be clean, dry and properly prepared. Apply adhesive to one or both substrates to be bonded. The parts must be held in contact until the adhesive is cured. It is important to remove uncured adhesive before curing. See "Clean Up" below for removal of uncured adhesive. Once cured, 9459 is very difficult to remove. Large quantities of uncured adhesive may exotherm during the cure cycle. Avoid quantities larger than 10 grams in mass. Larger quantities in a bondline are safe to cure.

Cure: Hysol 9459 can be cured for 60 minutes at 250°F. Faster cures can be achieved by using higher temperatures, for example, 30 minutes at 300°F. Cure temperatures above 350°F and below 250°F are not recommended. Cure time on your part will depend upon factors such as part geometry, materials to be bonded, bondline thickness and efficiency of the oven. Cure schedule should be confirmed with actual production parts and equipment. A clamping pressure of 15 psi is recommended to ensure that good contact in maintained during the cure cycle.

Clean Up: Uncured adhesive can be removed from the work area and application equipment by using many common solvents and citrus cleaners. Consult with your supplier's information pertaining to the safe and proper use of solvents.

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Product Description Sheet**Hysol® Product 9460F**

Industrial Products, August 2001

Description

Loctite® Hysol® 9460F is a faster cure version of 9460. The handling strength and pot life, are reduced by approximately 50% while maintaining most of the performance of Hysol 9460.

Recommend Substrates: metals, phenolic plastics, polyester, hard boards and forestry products, ceramics rubber, masonry materials and other construction materials.

Features

Shortened Pot Life
Fast Handling Strength
Good Peel Strength
Non-Sag Slump Resistant
Good Tensile Shear Strength
Easily Mixed/Easily Dispensed

Typical Uncured Properties	Part A	Part B	Mixed
Pot Life @ 77°F, 250 grams mins	--	--	15 to 20
Color	White	Black	Grey
Viscosity, cP	150,000 to 300,000	100,000 to 250,000	150,000 to 250,000
Mix Ratio			
By weight	100	100	--
By volume	1	1	--

Typical Properties	Typical Value
Hardness, Shore D	80

Shear Strength, psi, ASTM D 1002 Etched Aluminum	
Cure Schedule	Test Temp °F
6 Hours @ RT	77
18 Hours @ RT	77
3 Days @ RT	77
	180
	400

Peel Strength ASTM D 3167	Etched Aluminum, pli
3 Days @ 77°F	40

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

Handling

Mixing: This product requires mixing two components together just prior to the application. Complete mixing is necessary. The temperature of the separate components prior to mixing is not critical, but they should be at room temperature.

Application

Mixing - Bulk: Combine Part A (resin) and Part B (hardener) in the correct ratio and mix thoroughly. Continue to mix until all white and black streaks are gone and mix is uniformly grey. This is important! Heat build-up during or after mixing is normal. Do not mix quantities greater than two pounds as dangerous heat build-up can occur causing uncontrolled decomposition of the mixed adhesive. Mixing smaller quantities will minimize the heat build-up.

Mixing - Cartridges: Place cartridge in proper dispenser. To begin using a new cartridge, remove cartridge cap and dispense a small amount of adhesive, making sure Part A and Part B are extruding. Attach nozzle and dispense approximately 1-2" before applying onto the part being bonded. Partially used cartridges can be stored with mixing nozzle attached. To reuse, remove and discard the old nozzle, attach new nozzle and begin dispensing.

Application: Bonding surfaces should be clean and dry. Once the adhesive is applied, the bonded parts should be held in contact until the part has developed handling strength. It is not necessary to clamp the parts unless movement during curing is likely.

Cure: Hysol 9460F is formulated for fast cure and handling time. Parts can be handled in 3-4 hours at room temperature. Ultimate properties are achieved in 3 days at room temperature. Hysol 9460F can also be cured for 2 hours @ 140°F or 1 hour @ 180°F.

Clean-up: It is important to remove excess adhesive from the work area and application equipment before it hardens. Many common solvents and citrus cleaners are suitable for removing uncured adhesive. Consult with your supplier's information pertaining to the safe and proper use of solvents.

Packaging

50 ml and 200 ml EPS Cartridges
One and Five Gallon Systems

Storage

Store product in unopened container in a cool dry location. Ideal conditions are within the range 8 to 21 degrees C (46 to 70 degrees F) and are recommended for long term storage. Exposure to higher temperatures (greater than 28 degrees C) for prolonged periods should be avoided as extended exposure to warm conditions can adversely affect product properties. For further specific shelf life information, contact your local Technical Service Center.

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Product Description Sheet

Hysol® Product 9460PB

Industrial Products, August 2001

Description

Loctite® Hysol® 9460PB is a high strength, durable two-part epoxy adhesive specially developed for the fabricating offset printing blankets. This adhesive has the same high performance properties of 9460 with the longer worklife needed for blanket assembly. Hysol 9460PB bonds a variety of materials and gives especially good results on aluminum, spring steel, and fabric reinforced rubber printing blanket stock.

Features

Bonds All Printing Blanket Stock
Long work life
Good Peel Strength
Non-Sag Slump Resistant
Good Tensile Shear Strength
Easily Mixed/Easily Dispensed

Typical Uncured Properties	Part A	Part B	Mixed
Pot Life @ 77°F, 100 grams mins	--	--	95 to 110
Color	White	Black	Grey
Viscosity, cP	150,000 to 300,000	50,000 to 150,000	150,000 to 250,000
Specific Gravity	1.35	1.31	1.33
Mix Ratio			
By weight	100	100	--
By volume	1	1	--

Shear Strength, psi, ASTM D 1002 Etched Aluminum	Cure Schedule	Test Temp °F	Typical Value
	16 Hours @ 77°F	77	1500
	24 Hours @ 77°F	77	2000
	48 Hours @ 77°F	77	2250

Right Angle Peel Strength	Steel to Blanket Stock, pli
3 Days @ 77°F	15

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

Handling

Mixing: This product requires mixing two components together just prior to the application. Complete mixing is necessary. The temperature of the separate components prior to mixing is not critical, but they should be at room temperature.

Application

Mixing – Bulk: Combine Part A (resin) and Part B (hardener) in the correct ratio and mix thoroughly. Continue to mix until all white and black streaks are gone and mix is uniformly gray. This is important! Heat build-up during or after mixing is normal. Do not mix quantities greater than two pounds as dangerous heat build-up can occur causing uncontrolled decomposition of the mixed adhesive. Mixing smaller quantities will minimize the heat build-up.

Application: Bonding surfaces should be clean and dry. Once the adhesive is applied, the bonded parts should be held in contact until the part has developed handling strength. It is not necessary to clamp the parts unless movement during curing is likely.

Cure: Hysol 9460PB may be cured for three days at room temperature to achieve full performance. Hot fixtures or presses up to 350°F can be used to accelerate cure. The adhesive can be fully cured in as little as 10 minutes at this temperature. Other temperatures and times should be determined experimentally for each type of blanket design. Care must be given not to damage the elastomeric substrates.

Clean-up: It is important to remove excess adhesive from the work area and application equipment before it hardens. Many common solvents and citrus cleaners are suitable for removing uncured adhesive. Consult with your supplier's information pertaining to the safe and proper use of solvents.

Storage

Store product in unopened container in a cool dry location. Ideal conditions are within the range 8 to 21 degrees C (46 to 70 degrees F) and are recommended for long term storage. Exposure to higher temperatures (greater than 28 degrees C) for prolonged periods should be avoided as extended exposure to warm conditions can adversely affect product properties. For further specific shelf life information, contact your local Technical Service Center.

Packaging

Quart, One Gallon and Five Gallon Systems

Note

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LOCTITE® Hysol® 9460™

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PRODUCT DESCRIPTION

LOCTITE® Hysol® 9460™ provides the following product characteristics:

Technology	Epoxy
Chemical Type	Epoxy
Appearance (Resin)	White ^{MS}
Appearance (Hardener)	Black ^{MS}
Appearance (Mixed)	Grey
Components	Two part - Resin & Hardener
Mix Ratio, by weight - Resin : Hardener	1 : 1
Mix Ratio, by volume - Resin : Hardener	1 : 1
Cure	Room temperature cure after mixing
Secondary Cure	Heat
Application	Bonding
Specific Benefit	<ul style="list-style-type: none"> • Non-sag slump resistance • Smooth paste • Easy to mix • Easy to dispense • Extended working life • Quick heat response • Resistant to automotive fluids • Impact resistant • Fatigue resistant

LOCTITE® Hysol® 9460™ is a thixotropic, modified, two-component epoxy adhesive formulated for ease of use as well for a good balance of properties. This two-part adhesive is formulated to give very high peel strength coupled with excellent shear strength. The flexibility of the cured adhesive makes it useful for bonding dissimilar substrates. Recommended substrates include metals, engineering thermoplastics, and thermoset laminates such as sheet molding compound (SMC) without the use of primers.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Resin:

Specific Gravity @ 25 °C	1.35
Viscosity, Brookfield - HB, 25 °C, mPa·s (cP):	
Spindle 6, speed 20 rpm	150,000 to 300,000 ^{MS}
Weight Per Gallon, lbs/gal	11.3
Flash Point - See MSDS	

Hardener:

Specific Gravity @ 25 °C	1.31
Viscosity @ 25 °C, mPa·s (cP)	100,000 to 250,000
Weight Per Gallon, lbs/gal	10.9
Flash Point - See MSDS	

Mixed:

Specific Gravity @ 25 °C	1.33
Viscosity @ 25 °C, mPa·s (cP)	150,000 to 250,000
Peak Exotherm Temperature, °C,	93
Weight Per Gallon, lbs/gal	11.1
Pot life @ 25 °C, minutes	40 to 65 ^{MS}

TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 25 °C except where noted

Physical Properties:

Shore Hardness, ISO 868, Durometer D:

Cured for 2 hours @ 60 °C 275^{MS}

Glass Transition Temperature, °C

68

Elongation, ISO 527-2, %

3.5

Tensile Strength, ISO 527-2

N/mm²

(psi) 30.3 (4,400)

Tensile Modulus, ISO 527-2

N/mm²

(psi) 2,758 (400,000)

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 3 days @ 25 °C

Lap Shear Strength, ISO 4587:

Aluminum (etched):

0.125 mm gap, tested @ -53 °C

N/mm²

(psi) 20.7 (3,000)

0.125 mm gap, tested @ 25 °C

N/mm²

(psi) 24.1 (3,500)

0.125 mm gap, tested @ 82 °C

N/mm²

(psi) 6.7 (1,000)

0.125 mm gap, tested @ 121 °C

N/mm²

(psi) 2.1 (300)

0.25 mm gap, tested @ 25 °C

N/mm²

(psi) 22.1 (3,200)

0.75 mm gap, tested @ 25 °C

N/mm²

(psi) 15.2 (2,200)

1.5 mm gap, tested @ 25 °C

N/mm²

(psi) 13.8 (2,000)

Aluminum (degreased):

0.125 mm gap, tested @ 25 °C

N/mm²

(psi) 22.1 (3,200)

Aluminum (grit blasted):

0.125 mm gap, tested @ 25 °C

N/mm²

(psi) 24.1 (3,500)

Steel (cold rolled) (grit blasted):

0.125 mm gap, tested @ 25 °C

N/mm²

(psi) 24.1 (3,500)

Steel (cold rolled) (degreased):

0.125 mm gap, tested @ 25 °C

N/mm²

(psi) 22.1 (3,200)

Primer steel (black e-coated):

0.75 mm gap, tested @ 25 °C

N/mm²

(psi) 9.0 (1,300)



Technologies

Steel (coil coated):

0.75 mm gap, tested @ 25 °C

N/mm² 13.8
(psi) (2,000)**Rynite:**

0.75 mm gap, tested @ 25 °C

N/mm² 1.7
(psi) (250)**ABS:**

0.75 mm gap, tested @ 25 °C

N/mm² 2.8
(psi) (400)**PVC (clear):**

0.75 mm gap, tested @ 25 °C

N/mm² 4.3
(psi) (620)**PVC (filled):**

0.75 mm gap, tested @ 25 °C

N/mm² 3.7
(psi) (540)**Polycarbonate:**

0.75 mm gap, tested @ 25 °C

N/mm² 4.8
(psi) (700)**Eagle Picher 218-2, SMC:**

0.75 mm gap, tested @ 25 °C

N/mm² 3.4
(psi) (500)

0.75 mm gap, tested @ 82 °C

N/mm² 2.8
(psi) (400)**Budd DSM-950, SMC:**

0.75 mm gap, tested @ 25 °C

N/mm² 3.9
(psi) (560)

0.75 mm gap, tested @ 82 °C

N/mm² 3.1
(psi) (450)**Diversitech 8002:**

0.75 mm gap, tested @ 25 °C

N/mm² 3.7
(psi) (535)

0.75 mm gap, tested @ 82 °C

N/mm² 2.4
(psi) (350)**Premix EMS 30271, SMC:**

0.75 mm gap, tested @ 25 °C

N/mm² 3.4
(psi) (500)

0.75 mm gap, tested @ 82 °C

N/mm² 2.9
(psi) (425)**Ashland Phase Alpha:**

0.75 mm gap, tested @ 25 °C

N/mm² 3.1
(psi) (445)

0.75 mm gap, tested @ 82 °C

N/mm² 2.0
(psi) (290)**Rockwell 9465:**

0.75 mm gap, tested @ 25 °C

N/mm² 3.8
(psi) (550)

0.75 mm gap, tested @ 82 °C

N/mm² 3.8
(psi) (550)**Derakane 790 HSMC:**

0.75 mm gap, tested @ 25 °C

N/mm² 7.6
(psi) (1,100)**Fiberite:**

0.75 mm gap, tested @ 25 °C

N/mm² 6.8
(psi) (980)**Lytex 9063 Epoxy SMC:**

0.75 mm gap, tested @ 25 °C

N/mm² 8.6
(psi) (1,250)**Graphite Epoxy Laminate:**

0.75 mm gap, tested @ 25 °C

N/mm² 13.8
(psi) (2,000)**Spectrim HF-85 RIM:**

0.75 mm gap, tested @ 25 °C

N/mm² 2.7
(psi) (390)**Arimax RTM:**

0.75 mm gap, tested @ 25 °C

N/mm² 6.6
(psi) (950)**Peel Strength, ASTM D 3167:****Aluminum (etched):**

Tested @ -55 °C

N 4.4
(lb) (25)
N 5.3
(lb) (30)

Tested @ 25 °C

N 5.3
(lb) (30)**T* Peel Strength, ISO 11339:****Aluminum (etched):**

Tested @ -55 °C

N 3.5
(lb) (20)
N 2.6
(lb) (15)

Tested @ 25 °C

N 2.6
(lb) (15)

Cured for 8 hours @ 25 °C followed by 1 hour @ 121 °C

Peel Strength, ASTM D 3167:**Aluminum (etched):**

Tested @ -55 °C

N 7.0
(lb) (40)
N 5.3
(lb) (30)

Tested @ 25 °C

N 5.3
(lb) (30)**T* Peel Strength, ISO 11339:****Aluminum (etched):**

Tested @ -55 °C

N 4.4
(lb) (25)
N 3.5
(lb) (20)

Tested @ 25 °C

N 3.5
(lb) (20)**TYPICAL ENVIRONMENTAL RESISTANCE****Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22 °C

Environment	°C	% of initial strength	
		720 h	
Air	25	100	
Water	54	75	
Salt fog	35	63	
Water/glycol 50/50	130	50	
ATF	25	100	
ATF	82	100	
Brake fluid	25	100	
Windshield wiper fluid	25	88	
Motor oil (10W40)	25	100	
Motor oil (10W40)	141	100	
Gasoline (unleaded)	25	100	
Diesel fuel	25	100	
100% RH	38	75	

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).

Directions for use**Mixing:**

1. When mixing by hand, combine Part A (Resin) and Part B (Hardener) in the correct ratio and mix thoroughly until the color and consistency are uniform. EPOXI-PATCH® Tube Kits have been designed so that squeezing **EQUAL LENGTH BEADS of Part A & Part B** will give the proper ratio.
2. Mixing the adhesive just prior to use is recommended. The temperature of the separate components prior to mixing is not critical, but they should be close to room temperature.
3. Heat buildup during and after mixing is normal. To reduce the likelihood of exothermic reaction or excessive heat buildup, mix less than 4,500 grams at a time. Mixing smaller amounts will minimize heat buildup.
4. When mixing using a cartridge, place cartridge in proper dispenser. To begin using a new cartridge, remove the cap and dispense a small amount of adhesive, making sure both parts A & B are extruding. Attach nozzle and dispense approximately 2.5 to 5.0 cm before applying onto the part to be bonded. Partially used cartridges should be stored with the mixing nozzle attached. To reuse, remove and discard the old nozzle, attach the new nozzle, and begin dispensing.

Applying

1. Bonding surfaces should be clean, dry, and free of contamination.
2. Once the adhesive is applied, the bonded parts should be held in contact until the part has developed handling strength. Fixturing can be removed at this point. Since the full bond strength has not yet been attained, load application should be small at this time.

Cure

1. Complete cure is obtained after 72 hours @ 25 °C. LOCTITE® Hyso® 9460™ can also be fully cured with heat such as; 6 to 8 hours at a maximum temperature of 149 °C.
2. After 24 hours, approximately 90% of full cure properties are attained at room temperature.
3. Other times and temperatures (149°C is a suggested maximum) can be used depending on the application.
4. Heat cures can be modified to achieve a desired degree of cure from handling strength to full cure.

Clean up

1. It is important to clean up excess adhesive from the work area and application equipment before it hardens.
2. Denatured alcohol and many common industrial solvents are suitable for removing uncured adhesive.

Loctite Material Specification¹⁰⁰

LMS dated June 10, 2005 (Resin) and LMS dated October 18, 2004 (Hardener). Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Loctite Quality.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties. Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

(°C x 1.8) + 32 = °F
 kV/mm x 25.4 = V/mil
 mm / 25.4 = inches
 µm / 25.4 = mil
 N x 0.225 = lb
 N/mm x 5.71 = lb/in
 N/mm² x 145 = psi
 MPa x 145 = psi
 N·m x 8.851 = lb-in
 N·m x 0.738 = lb-ft
 N·mm x 0.142 = oz-in
 mPa·s = cP

Note

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits. The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

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Reference 0.0